

DATA AVAILABILITY AND COST

DIGITAL DATA	FILE FORMATS	INITIAL PER LAYER COST
VirGIS Data Layer – Raster	Raster:	\$40
Agricultural Land Use	MAP	
Elevation	GRASS Import	
Erosion Index	ARC ASCII	
Water Quality Index	Vectorized:	\$80
Water Features	DLG3	
Delivery Ratio	ARC Export	
Slope	Shapefile	
Soils		

DCR Data Labels – Vector	DLG3, ARC Export or Shapefile	
Watershed Boundaries (see terms)	per jurisdiction:	\$0
Jurisdiction Boundaries	as single VA unit	\$0
National Wetlands Inventory	same vector formats above	\$30

GEOGRAPHY	All data layers are available in jurisdiction units. Watershed and jurisdiction boundaries are also available in a state unit.
MEDIUM	4 mm and 8mm tape cartridges (tar). Diskettes or 2120 QIC (large orders) MS-DOS formatted.
DATA FORM	7 bit ASCII on diskette, 8 bit ASCII on 4mm and 8mm cartridges.
SCALE	All data captured at 1: 24000 (0.61 meter resolution). Raster cells vary in size: primarily 1 or 1/9 hectare.
PROJECTION	Individual jurisdictions in UTM; NAD27; in the most appropriate zone (will be specified). Statewide layers in Albers (continental US standards).
COST	There is a base charge of \$20 per order for medium, postage, and handling unless ftp is to be used. Per layer costs above are for initial data layer purchased. Additional layers of vector data for the same data type (i.e. NWI) or additional layers of raster data are ½ the cost of the initial layer. Example: NWI data for 3 counties and soils (raster) for 2 counties cost (\$30+\$15+\$15 and \$40+\$20).
TO ORDER	Complete Order Form and mail to: Department of Conservation and Recreation Division of Soil and Water Conservation Attn: Mr. Karl Huber 203 Governor Street, Suite 206 Richmond, Virginia 23219-2094 A Memorandum of Agreement (MOA) will be issued if necessary. Requests will be processed upon return of signed MOA. Questions? Call (804) 371-7484 for help.

Special requests may be negotiated; additional charges may apply. DCR may alter your order when it is to your cost advantage. Test files of the above data in various formats are available.
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ORDER FORM

Date: _____

INSTRUCTIONS:

Print address(es) and note order specifications.
 Note file format and geographic extent per layer requested.
 Estimate total cost using unit costs and pricing description.
 Special instructions may be noted below.
 Mail this completed form to the address on the previous page.

ADDRESSES

	Shipping	Billing (if different)
Agency/Company		
Contact Person		
Street Address		
City, State		
Zip		
Phone		

SPECIFICATIONS

Cartridge: _____ 4mm _____ 8mm _____ ftp diskette: _____ 3.5" _____ 5.25"

REQUESTED DATA

Data	Geographic Unit Name	File Format	Cost
SPECIAL INSTRUCTIONS		Base charge	+\$20
		TOTAL COST	

EXPLANATIONS OF TERMS

VIRGIS

The Virginia Geographic Information System (VirGIS) is a GIS, which has been developed for the DCR-DSWC by the Information Support Systems Laboratory primarily for identifying and prioritizing areas of non-point source pollution potential. Data layers relevant to this purpose (i.e. erosion, water quality, and watershed pollution density indexes, delivery ratios) are derived by performing matrix math operations on a set of base data layers (i.e. ag land use, soil, elevation, water features, jurisdiction and watershed boundaries). The base and derived data layers are referred to as the VirGIS database.

RASTER

Most VirGIS data is maintained in a raster file format. Unlike vector data, which consists of coordinates defining arcs, which may then define polygons, raster files are primarily a series of values, which are measures of the geographic layer. A record in a raster file of elevation, for instance, would contain a series of values, one per cell, defining feet above sea level. Coordinates are limited to the file's header record, which may also describe the extent of the raster matrix. Raster files describe a rectangular geographic extent; every record (row) has an equal number of cell values (columns). The matrix fully covers a geographic unit, with an out-of-bounds value assigned to cells outside the unit's border but within the rectangular matrix. Standard VirGIS matrices are unformatted (2 or 4 byte binary representation), but may be converted to a variety of raster file formats (described later) for distribution. Cell size is typically either 1 or 1/9 hectares.

VIRGIS AGRICULTURAL LAND USE

Land use categorized from the photo interpretation of NHAP or NAPP CIR photography as being either cropland, pastureland, or non-agricultural.

VIRGIS EROSION INDEX

The Erosion Index (EI) is derived from a modification of the Universal Soil Loss Equation (USLE). It represents the maximum potential soil loss from one hectare area divided by the soil tolerance factor (T). EI is calculated in a manner consistent with the provisions of the 1985 Farm Bill currently being implemented by the USDA Natural Resources Conservation Service (NRCS). Official determinations of Highly Erodible Land are made on a field basis by the NRCS staff; the VirGIS EI layer, which is calculated for an entire jurisdiction, is intended to serve as a planning tool. EI is available as raw values or categorized into a USDA NRCS classification scheme.

VIRGIS DELIVERY RATIO

A first order function used to approximate the sediment that is moved from a cell to a receiving stream. This measure is calculated from the length and steepness of the flowpath and a land cover coefficient. It is available as a separate matrix.

VIRGIS WATER QUALITY INDEX

The Water Quality Index (WQI) is derived by multiplying the calculated USLE of a cell by the calculated delivery ratio. It is a relative measure of the effects to water from soil erosion. In VirGIS, it is only calculated for ag land use cells and is available as raw values or categorized by rank.

VIRGIS SLOPE

This data layer contains the maximum attainable slope (modified) of reach cell. The maximum slope is calculated by using the greatest differential between a cell's elevation and that of all eight surrounding cells. The result is modified to fall within the slope range of the soil type for each cell.

WATERSHED BOUNDARIES

Files are available of the 48 USGS Cataloging units (CU) and of the 494 subsets of the CUs known as Virginia's hydrologic units (HU). The HUs were delineated by the DCR-DSWC in cooperation with the USDA NRCS and the Virginia DEQ, with contractual support from the ISSL. The original 1990 HU geography was revised in 1995.

JURISDICTION BOUNDARIES

Vector files describing the boundaries of Virginia, counties in Virginia, and independent cities in Virginia, are available as single jurisdiction files or as a statewide layer. They are, however, already included (as the arcs describing the polygon of geographic extent) in files of the following vector datasets: watersheds, wetlands, and USGS 1:100,000 hydrology, by jurisdiction. Raster files which describe jurisdiction extents are sometimes needed to split corresponding matrixes of values defining conditions over a multi-jurisdictional area, such as the land use for a soil and water conservation district.

DATA FORMATS

Data is written to diskette and quarter inch cartridge as 7-bit ASCII and to 8mm and 4mm cartridges as 8-bit ASCII.

MAP FILE FORMAT

A raster file format of blank delimited cell values with header records, used in the Map Analysis Package or OSMAP. Also useable by PC-VirGIS.

GRASS IMPORT FORMAT

A raster file format of blank delimited raster cell values with header records which may be imported into GRASS via the `mimportcell` (version 3) or `r.import` (version 4) commands.

ARC ASCII MATRIX

A raster file format of blank delimited raster cell values with header records which may be imported into ARC/INFO's GRID system using the `ASCIIGRID` command.

ARC EXPORT FORMAT

An interchange format for the transfer of data between ARC/INFO sites. Most DCR vector data is available as an export of an ARC coverage. Export files can be fully compressed or uncompressed.

DLG3

An interchange format for the transfer of vector data. DCR produces DLG files in the optional format of 80 byte logical records, and abides to the National Mapping Program's standards for digital line graphs.

SHAPEFILE

A nontopological vector file format used by ESRI's ArcView software. The format consists of three separate files; a spatial data (coordinates) file, a spatial data index file, and an attribute file.

OLD NWI

The first phase of NWI development in Virginia. Photo interpretation was from a mix of 1:80,000 black and white and 1:58,000 color infrared aerial photos taken between 1973 and 1983.

NEW NWI

Subsequent phases of NWI development in Virginia. Photo interpretation is from 1:58,000 to 1:40,000 color infrared photos taken from 1982 to 1995 using aerial photography of the National High-Altitude Photography program and the National Aerial Photography Program.

MEMORANDUM OF AGREEMENT

DCR requires a memorandum of agreement (MOA) be executed between DCR and recipients of the VirGIS raster data. The MOA covers data distribution, acknowledgment of source, and liability of use. It is not required for receiving data from DCR that was developed by the USGS, USFWS, etc.